



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/696,527	10/29/2003	Zhelong Xu	USAV2001/0092 US CNT	6385

46137 7590 07/26/2005  
SYNNESTVEDT & LECHNER LLP  
2600 ARAMARK TOWER  
1101 MARKET STREET  
PHILADELPHIA, PA 19107-2950

EXAMINER

CHONG, YONG SOO

ART UNIT	PAPER NUMBER
----------	--------------

1617

DATE MAILED: 07/26/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/696,527	<b>Applicant(s)</b> XU ET AL.	
	<b>Examiner</b> Yong S. Chong	<b>Art Unit</b> 1617	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is FINAL.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |  |
|--|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)            |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>2/11/04</u> . | 6) <input type="checkbox"/> Other: ____  |

## **DETAILED ACTION**

### ***Status of the Application***

Claims 1-15 are pending and are examined herein.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-6, 8-13, 15 are rejected under 35 U.S.C. 102(b) as being anticipated by Clark et al. (Cardiovascular Drug Reviews, vol. 18, no.3, 2000, pages 183-210).

Clark et al. teaches AMP 579 as a novel adenosine A1/A2 receptor agonist with significant potential to pharmacologically induce cardioprotection during myocardial infarction and cardiac surgery (pg. 184, paragraph 4). Intravenous AMP 579 showed striking cardioprotection in pigs when administered through the first hour of reperfusion (pg. 188, paragraph 2). Furthermore, a similar magnitude of cardioprotection is observed when AMP 579 is administered 20 minutes after the onset of myocardial ischemia and 10 minutes prior to the onset of reperfusion (pg. 191, paragraph 2). What's more, six patients were treated for end-stage renal disease by administering 50 µg/kg of AMP 579 as a 6 hour, constant rate infusion (pg. 201, paragraph 1).

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham vs John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 7, 14 are rejected under 35 U.S.C. 103(a) as being obvious over Clark et al. (Cardiovascular Drug Reviews, vol. 18, no.3, 2000, pages 183-210) as applied to claims 1-6, 8-13, 15, and further in view of Berge et al. (Berge SM, Bighley LD, Monkhouse DC. "Pharmaceutical Salts" *Journal of Pharmaceutical Sciences*, vol. 66, no. 1, January 1977).

The instant claims are directed to a method of cardioprotection with an adenosine A1/A2 agonistic compound in a pharmaceutically acceptable salt form.

Clark et al. teach a method of cardioprotection with an adenosine A1/A2 agonistic compound, however fails to disclose the compound in a pharmaceutically acceptable salt form.

Art Unit: 1617

Berge et al. teach that it's widely known to those in the art to convert drugs into their salt form (pg. 1, paragraph 1). The salt form is known to improve many properties such as dissolution rate, solubility, and stability (pg. 5, paragraphs 3-4). Thus, enhanced solubility results in improved bioavailability (pg. 10, paragraph 11-12).

Therefore, it would have been prima facie obvious to a person of ordinary skill in the art, at the time the claimed invention was made, to administer the adenosine A1/A2 agonistic compound in a pharmaceutically acceptable salt form because of the expectancy of increased solubility of the compound in a pharmaceutically acceptable carrier.

A person of ordinary skill in the art would have been motivated to formulate the adenosine A1/A2 agonistic compound in a pharmaceutically acceptable salt form because of the expectancy of increasing the bioavailability and efficacy of the compound in the patient according to Berge et al.

### ***Conclusion***

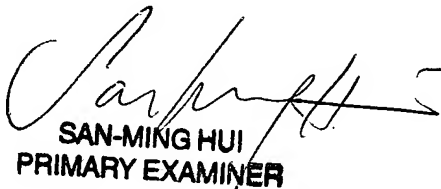
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Yong S. Chong whose telephone number is (571)-272-8513. The examiner can normally be reached on M-F, 9-6.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, SREENI PADMANABHAN can be reached on (571)-272-0629. The fax phone number for the organization where this application or proceeding is assigned is (571)-273-8300.

Art Unit: 1617

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

YSC

  
SAN-MING HUI  
PRIMARY EXAMINER